

ABSTRACT

The invention relates to methods and compositions for removing a dissociated species from a fluid medium solution during and after it has detached from a solid-phase immersed in said medium, thereby allowing the concentration of free species to remain close to zero, and for improving the signal to noise ratio in assays. This is achieved by employing a substrate, such as a scavenging solid-phase, having an attached binding partner or partners ("scavenger") for the specifically binding species and which is present during storage. This substrate may also contain regions for binding signal generating components attached to the solid-phase. This substrate binds any free species bleeding off the solid phase, increasing the reliability and sensitivity of assays. A subset of the substrates in the invention additionally forms cross-linked networks of solid-phase particles that further increase the sensitivity of assays.